

CLAIMS

Please cancel claims 46-47, 51-52, and 54, without prejudice, amend claims 48-50 and 53, and add claims 55-63, as indicated on the following listing of all the claims in the present application after this Amendment.

1. (Cancelled)
2. (Previously presented) A system for sensing and recording or transmitting processing conditions comprising:
 - a substrate having a surface, the substrate comprising sensors to measure the processing conditions of the substrate at different areas of the substrate;
 - one or more electronics platforms mounted to the surface of the substrate comprising signal acquisition circuitry coupled to an output of the sensors;
 - the one or more electronics platforms individually comprising at least one integrated circuit; and
 - wherein each of the one or more platforms comprise one or more legs and a shelf, the one or more legs elevating the shelf from the surface.
3. (Original) The system of claim 2 wherein the signal acquisition circuitry is upon the shelf.
4. (Previously presented) The system of claim 2 wherein the substrate is a wafer.
5. (Previously presented) The system of claim 2 wherein the substrate comprises glass.
6. (Previously presented) The system of claim 2 further comprising a remote data processing module.

7. (Previously presented) A system for sensing and recording or transmitting processing conditions comprising:

a substrate having a surface, the substrate comprising sensors to measure the processing conditions of the substrate at different areas of the substrate;

one or more electronics platforms mounted to the surface of the substrate comprising signal acquisition circuitry coupled to an output of the sensors;

wherein each of the one or more platforms comprise one or more legs and a shelf, the one or more legs elevating the shelf from the surface

wherein the electronics platform further comprises data transmission circuitry comprising a transceiver, the data transmission circuitry operable to transmit the processing conditions in real time during measurement of the processing conditions to the data processing module via the transceiver.

8. (Original) The system of claim 7 wherein the transceiver transmits and receives RF signals.

9. (Original) The system of claim 7 wherein the transceiver transmits and receives IR signals.

10. (Original) The system of claim 7 wherein the transceiver inductively transmits and receives.

11. (Original) The system of claim 7 wherein the transceiver sonically transmits and receives.

12. (Original) The system of claim 7 wherein the system further comprises a data transmission cable and wherein the data transmission circuitry transmits the processing conditions over the cable.

13. (Original) The system of claim 7 wherein the data transmission circuitry is further operable to send and receive control signals to and from the data processing module.

14. (Original) The system of claim 6 wherein the data processing module comprises a microprocessor, a storage device, a display, and an input device.

15. (Previously presented) The system of claim 2 wherein the processing conditions measured by the sensors comprise one or more of the following conditions: temperature, pressure, flow rate, vibration, ion current density, ion current energy, and light energy density.

16. (Previously presented) The system of claim 2 wherein the sensors are discrete sensors mounted in or on the wafer.

17. (Previously presented) The system of claim 2 wherein the sensors are part of an integrated circuit formed in or on the wafer.

18. (Previously presented) The system of claim 2 wherein the electronics platform further comprises a power supply.

19. (Previously presented) The system of claim 17 wherein the power supply comprises an inductive power source.

20. (Previously presented) The system of claim 2 further comprising an antenna connected to the wafer and electrically coupled to the signal acquisition circuitry.

21-43. (Cancelled)

44. (Previously presented) A system for sensing and recording or transmitting processing conditions comprising:

a substrate having a surface, the substrate comprising sensors to measure the processing conditions of the substrate at different areas of the substrate;

one or more electronics platforms mounted to the surface of the substrate comprising signal acquisition circuitry coupled to an output of the sensors; and

wherein the electronics platform is mounted to a recessed portion of the surface of the substrate, wherein the recessed portion and the platform are within a cavity and wherein the platform is substantially equal in mass to the removed cavity.

45-47. (Cancelled)

48. (Currently amended) ~~The system of claim 47~~A system for sensing processing conditions comprising:
a substrate;
a plurality of sensors attached to the substrate;
an electronics platform electrically coupled to the plurality of sensors;
the electronics platform including at least one integrated circuit;
the electronics platform mounted to the substrate by one or more legs that elevate the platform from the substrate; and
a gap between the electronics platform and the substrate wherein the gap is from 1mm to 5mm.

49. (Currently Amended) ~~The system of claim 46~~A system for sensing processing conditions comprising:
a substrate;
a plurality of sensors attached to the substrate;
an electronics platform electrically coupled to the plurality of sensors;
the electronics platform including at least one integrated circuit; and
the electronics platform mounted to the substrate by one or more legs that elevate the platform from the wherein the one or more legs are between 1mm to 5mm in height and between 0.05mm and 1.0mm in width.

50. (Currently Amended) ~~The system of claim 46 further comprising~~A system for sensing processing conditions comprising:
a substrate;
a plurality of sensors attached to the substrate;
an electronics platform electrically coupled to the plurality of sensors;
the electronics platform including at least one integrated circuit;
the electronics platform mounted to the substrate by one or more legs that elevate the platform from the substrate; and
an electrical cable between the electronics platform and the substrate.

51-52. (Cancelled)

53. (Currently Amended) ~~The system of claim 46~~A system for sensing processing conditions comprising:

a substrate;

a plurality of sensors attached to the substrate;

an electronics platform electrically coupled to the plurality of sensors;

the electronics platform including at least one integrated circuit; and

the electronics platform mounted to the substrate by one or more legs that elevate the platform from the substrate wherein the one or more legs insulate the platform from high temperatures at the substrate.

54. (Cancelled)

55. (New) A system for sensing processing conditions comprising:

a substrate;

a plurality of sensors attached to the substrate;

an electronics platform electrically coupled to the plurality of sensors;

the electronics platform encompassing at least one integrated circuit; and

the electronics platform mounted to the substrate by one or more legs that elevate the platform from the substrate.

56. (New) The system of claim 55 further comprising a gap between the electronics platform and the substrate.

57. (New) The system of claim 56 wherein the gap is from 1mm to 5mm.

58. (New) The system of claim 55 wherein the one or more legs are between 1mm and 5mm in height and between 0.05mm and 1.0mm in width.

59. (New) The system of claim 55 further comprising an electrical cable between the electronics platform and the substrate.

60. (New) The system of claim 55 further comprising electrical conductors integral to the one or more legs.

61. (New) The system of claim 55 wherein the electronics platform is mounted to the center of a surface of the substrate.

62. (New) The system of claim 55 wherein the one or more legs insulate the platform from high temperatures at the substrate.

63. (New) The system of claim 55 further comprising an additional electronics platform, the electronics platform and the additional electronics platform being equidistant from the center of the substrate along a diameter of the substrate.